

Citrix XenDesktop Beta

Getting Started Guide

Citrix® XenDesktop™ Beta provides a complete virtual desktop delivery system. In this beta release, you get an early look at how XenDesktop works, how you can set it up, and how XenDesktop simplifies desktop operations to provide the best user experience at the lowest cost of ownership.

XenDesktop integrates several distributed components with advanced configuration tools that simplify the creation and real-time management of the virtual desktop infrastructure.

In particular, this release of XenDesktop enables you to create an infrastructure capable of delivering full-screen Microsoft Windows® XP or Microsoft Windows Vista desktops to users on XP or Vista computers (endpoint devices). Full screen in this context means that the user experience is equivalent to that of a local Windows desktop, except that the desktop is virtual, running on a remote server.

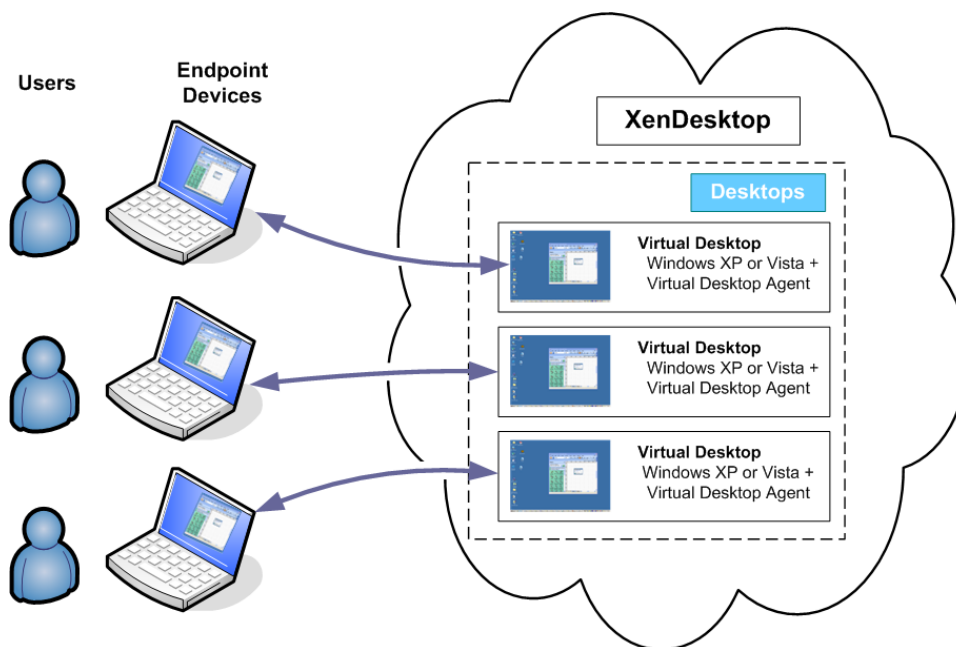


Figure 1. XenDesktop user experience

From a user's perspective, logging on to a remote desktop is virtually indistinguishable to logging on to a local one. The user enters a single user name and password, and XenDesktop handles the rest.

This guide is for IT system administrators and others who want to gain hands-on experience with the XenDesktop virtual desktop delivery solution. It provides step-by-step instructions for installing an infrastructure that supports desktop virtualization using Citrix XenServer™.

XenDesktop Beta - Getting Started Environment

The following figure shows the Getting Stated environment, as described in this guide.

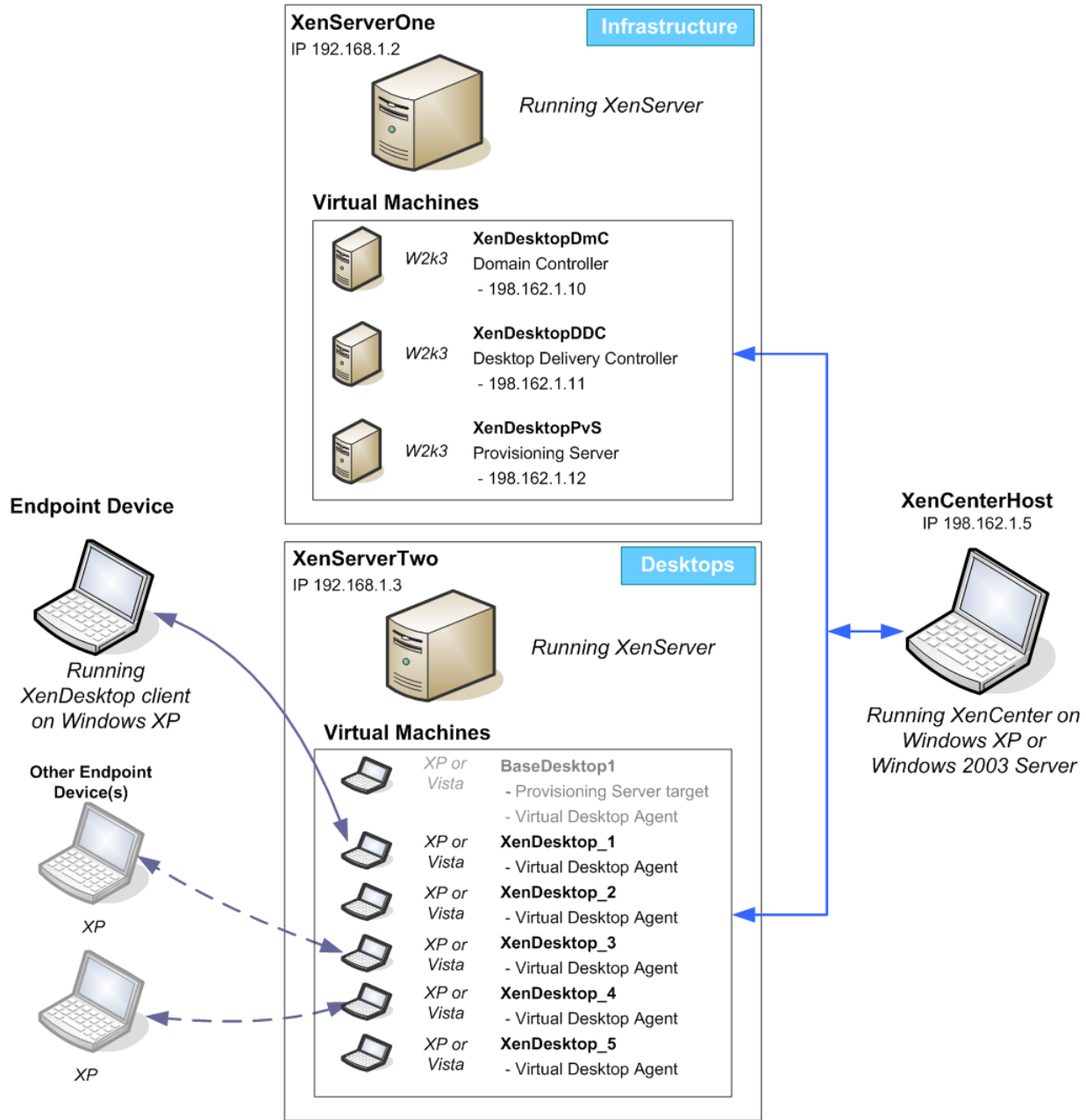


Figure 2. XenDesktop Beta - Getting Started environment

The Getting Started environment comprises the following:

- XenServerOne, a server that runs XenServer software, and hosts the XenDesktop infrastructure components.
- XenServerTwo, a server that also runs XenServer and hosts the virtual desktops.
- A single endpoint device running windows XP that is connected over ICA to a virtual machine (VM) that runs an XP desktop for the endpoint. You can add additional endpoints as required.

- XenCenterHost, a machine that runs XenCenter, an application that enables an administrator to manage the VMs on the servers.

In a production environment, you could distribute the infrastructure components to other physical devices as necessary, and create a farm of servers running XenServer to support large numbers of virtual desktops.

Windows Vista Support

Users can connect to virtual desktops running on Windows Vista as well as Windows XP.

In this guide, the primary use case is that of virtual desktops running Windows XP rather than Windows Vista. The step-by-step procedures in the *Installation and Configuration Procedures* section on page 8 focus on the Windows XP case; where differences exist for Windows Vista, these are noted in the text.

Software Components

The XenDesktop Beta Getting Started environment comprises the following components:

Citrix XenServer	An enterprise-class virtual infrastructure solution that creates the foundation for delivering virtual desktops and offers advanced management features. Multiple virtual machines (VMs) can run on XenServer, which is able to take advantage of the advanced virtualization features of the latest virtualization-enabled processors from Intel® and AMD®.
Citrix Desktop Delivery Controller	A component that manages the connections between users' endpoint devices and the virtual desktops.
Citrix Provisioning Server	A component that enables you to stream a single desktop image to create multiple virtual desktops on one or more servers in a data center. This facility greatly reduces the amount of storage required compared to other methods of creating virtual desktops.
XenCenter	A stand-alone application that runs on the XenCenterHost computer. You can use XenCenter to create and manage the virtual machines running under the XenServer software.
License server	A component that validates licenses for Desktop Delivery Controller and Provisioning Server. You install this component when you install Desktop Delivery Controller.
Virtual desktop	A desktop operating system (for example, Windows XP) running on a virtual machine that, in turn, runs on XenServer.
Virtual desktop agent	Software that enables an operating system running on a virtual machine to make its desktop available to another computer (or endpoint device). This involves sending desktop screens, windows, dialog boxes, and sounds to the endpoint; while receiving input (such as mouse clicks and key presses) from a user working on that endpoint device.
XenDesktop Client	Software that enables an endpoint device to connect (using the ICA protocol) to a virtual Windows XP or Vista desktop. With the ICA protocol, all desktop logic executes on the desktop host, and only screen updates, mouse clicks, and keystrokes are transmitted to the user's machine. For more information on the features of ICA, refer to the <i>Clients for Windows Administrator's Guide</i> .
XenDesktop Setup Tool Beta	A tool that automates parts of the creation, delivery, and maintenance of large installations of virtual desktops. This wizard-driven tool that integrates Citrix components so that system administrators can quickly create multiple desktops.

Citrix XenServer	An enterprise-class virtual infrastructure solution that creates the foundation for delivering virtual desktops and offers advanced management features. Multiple virtual machines (VMs) can run on XenServer, which is able to take advantage of the advanced virtualization features of the latest virtualization-enabled processors from Intel® and AMD®.
XenServer Tools	Tools that provide custom Windows drivers and a management agent. The drivers provide high performance disk and network support for Windows guests. The management agent provides integration between the XenServer system, XenCenter, and the guest OS, for operations such as orderly shutdown from outside the guest, and hot plug/hot removal of disk drives. To install these tools on specific VMs, see <i>To install XenServer Tool</i> on page 16.

Installed Software

There are essentially four hardware devices in the Getting Started environment, although additional endpoints can easily be added.

Name	VMs and Installed Software
Endpoint Device(s)	For the Getting Started Environment, a computer running the XenDesktop client. During the installation, you create the five XP VM desktops with names XenDesktop_1 through XenDesktop_5 that endpoints can access.
XenCenterHost	A Windows XP or Windows Server 2003 computer that runs the XenCenter application.
XenServerOne	A server running the XenServer software. You assign the name XenServerOne during the installation. For the purposes of this beta release, this server provides three VMs that collectively provide the XenDesktop delivery infrastructure as follows: <ul style="list-style-type: none"> • XenDesktopDmC—the domain controller running Windows Server 2003 in Native or Mixed mode with: <ul style="list-style-type: none"> - Active Directory - DNS - DHCP • XenDesktopDDC—runs Citrix Desktop Delivery Controller on Windows Server 2003 and includes: <ul style="list-style-type: none"> - Citrix Desktop Delivery Controller - Access Management Console - License Server Console • XenDesktopPvS—runs the Citrix Provisioning Server on Windows Server 2003 and includes: <ul style="list-style-type: none"> - Provisioning Server - Provisioning Server SDK - XenDesktop Setup Tool
XenServerTwo	A second server running the XenServer software. You assign the name XenServerTwo during the installation. This server hosts the VMs on which the virtual desktops reside.

IP Addressing

For simplicity, this guide specifies an isolated LAN environment with IP addressing scheme based on the following assumptions:

- A simple Ethernet switch is used to connect the hardware.
- The VMs on XenServerOne have manually assigned IP addresses. For reference, these IP addresses are listed in *Figure 2. XenDesktop Beta - Getting Started environment* on page 2 and in the step-by-step procedures.
- The VMs on XenServerTwo providing the virtual desktops, XenDesktop1 through XenDesktop5 have IP addresses assigned by DHCP.

You can define your own IP addresses based on the local environment into which you are installing XenDesktop Beta. In this case, in the *Installation and Configuration Procedures* section, you can replace the specified IP addresses with addresses appropriate to your own environment, as necessary.

System Requirements

The hardware requirements described in this section relate to the environment described in Figure 2. XenDesktop Beta - Getting Started environment on page 2.

Requirements for XenDesktop Beta

Recommendations: Citrix strongly recommends that you install this environment separately from and in isolation from your production environment.

All server-side components should be installed on virtual machines using the XenServer virtualization infrastructure.

Software Requirements

This section lists the required third-party products and the major Citrix products and components on the supplied ISO images.

Citrix Products and Components

All Citrix components are supplied on the XenDesktop Beta installation ISO images. It is important that you use these versions and not versions that you may have previously acquired.

- Citrix Desktop Delivery Controller Beta.
- Citrix Provisioning Server 4.5
This is the generic version and it is not specific to this beta release.
- Citrix XenDesktop Setup Tool 2.0 Beta
- Citrix XenServer 4.1 Enterprise Edition Beta
- Citrix Presentation Server Client (XenDesktop) Beta 10.230.
This client incorporates advanced features that are specific to this beta release.
- XenCenter 4.1 - Beta

Third-Party Products

All non-Citrix products, except Microsoft .NET Framework 3.0, must be sourced and licensed by the customer.

- **Domain Controller:**
 - Microsoft Windows Server 2003, Standard or Enterprise edition, with Service Pack 2.
 - Microsoft .NET Framework 3.0 required. This is a non-licensable Microsoft product and is included on the installation ISO image.
- **Virtual Desktops:**
 - **Windows XP**
Windows XP Professional 32-bit, with Service Pack 2.
Microsoft .NET Framework 3.0 required. This is a non-licensable Microsoft product and is included on the installation ISO under \Support\DotNet30.
 - **Windows Vista**
Microsoft .NET Framework 3.5 required. This is a non-licensable Microsoft product and is **not** included on the installation ISO image.
- **Endpoint devices**
 - **Windows XP**
Windows XP Professional (32-bit), with Service Pack 2.
Microsoft .NET Framework 3.0 required. This is a non-licensable Microsoft product and is included on the installation ISO image.
 - **Windows Vista**
Microsoft .NET Framework 3.5 required. This is a non-licensable Microsoft product and is **not** included on the installation ISO image.

Installation Time

You need to allocate sufficient time to install all the components XenDesktop Beta. Allow approximately one day to perform the complete installation.

Hardware Requirements

In this guide, the hardware configuration has been chosen to create an environment that provides for an optimal user experience in terms of when following the instructions in this guide. The instructions in this guide assume the following hardware:

Quantity	Type	Specifications	
2	Physical servers: XenServerOne and XenServerTwo in Figure 2, above.	CPU	Up to 32 64-bit Intel VT or AMD-V x86 CPUs. Minimum recommended clock speed 1.5 GHz. Support for virtualization, which is an option on the BIOS, must be enabled. Consult the documentation for your BIOS for more information. Note that if your CPUs do not support virtualization, you will not be able to complete the installation.
		Memory	Minimum 8 GB RAM
		Disk	100 GB locally attached storage (for example, PATA, SATA, or SCSI).
		NIC	100 Mbit/s or faster network interface card (NIC). For the purposes of this installation, Citrix recommends that you use only one NIC per device.

1	XenCenter Host	A computer running Windows XP or Windows Server 2003. For more information about the specifications for this device, refer to the <i>XenServer Installation Guide</i> .
1	Endpoint device	A computer running Windows XP (with Service Pack 2) or a Windows Vista computer.

For further details regarding requirements refer to each component's product documentation.

What's in the Download Package?

The download package contains the following folders:

Folder	CitrixXenServerEnterpriseEdition
ISO image name	XenServer-4.0.96-install-cd.iso (XenServer installation iso)
Updates	Hotfix-miami-beta2-netapp-sv.xsupdate (XenServer hot fix installation file)

Folder	Citrix Desktop Delivery Controller
ISO image names	XDS_2_0_0_w2k3_en.iso (for Windows Server 2003) XDS_2_0_0_x64_en.iso (for Windows x64)

Folder	Citrix Provisioning Server
ISO image name	ProvisioningServer 4.5.iso
Components	Provisioning Server 4.5

Folder	Misc	
ISO image name	None	
Files	License file	CDS-TP.lic
	XenDesktop Setup Tool installation file	CitrixXenDesktopSetupToolBeta.msi
	Provisioning Server SDK	PVS-SDK.exe

Licensing

The following table summarizes licensing issues for this release:

Product(s)	Licensing Notes
XenServer XenCenter	No separate license required. The Beta versions included in this package are licensed until 15 August 2008, regardless of when the installation occurs.
Provisioning Server Desktop Delivery Controller	The beta licenses for Provisioning Server and Desktop Delivery Controller are in a single license file CDS-TP.lic , which is supplied in the Misc folder in download package.

Installation and Configuration Procedures

This section describes how to set up the various components described in the *Figure 2. XenDesktop Beta - Getting Started* environment on page 2.

Caution: Ensure that you perform the procedures in the correct order. This XenDesktop deployment is a set of sequential tasks labeled Task 1 through Task 11. You must perform these tasks in the order in which they are arranged and, within each task, you must perform the procedures in the order in which they occur.

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Task 1: Installing XenServer

In this task, you install the XenServer software on the two physical servers XenServerOne and XenServerTwo. XenServer is effectively an operating system and its installation removes any existing OS on the server.

The procedures for installing the XenServer software are almost identical on the two servers, except that you must specify different IP parameters for the two servers.

Note: Any computer on which you install the XenServer software must have a CPU that supports hardware virtualization (see *Hardware Requirements* on page 6).

To install XenServer on XenServerOne (and XenServerTwo)

1. Start XenServerOne (or XenServerTwo) from the CD created from the XenServer ISO image included in this beta release and follow the prompts on the installation wizard.
2. On the **Select Keymap** page, accept the default, **[qwerty] us**, or choose your key map and click **OK**.
3. On the **Welcome to XenServer** page, accept the default values, select **Install XenServer Host** and click **OK**.
4. On the **Welcome to XenServer Setup** page, read the warning and click **OK**.
5. On the **End User License Agreement** page, read the agreement, select **Accept EULA** and click **OK**.
6. If you have already installed an earlier version of XenServer, on the **Installation Type** page, select **Perform clean installation** and click **OK**.
7. If your target computer has multiple local hard disks, the **Select Primary Disk** page appears.
 - (i) Select the 'primary' disk (the disk on which you install XenServer) from the list and click **OK**.
 - (ii) In response to the prompt to choose a drive to be formatted for use by XenServer for VM storage, click **OK**.If the computer has only a single hard disk, these prompts do not appear, so skip to the next step.
8. On the **Select Installation Source** page, accept the default, **Local media** and click **OK**.
9. On the **Linux Pack** page, click **No**.
10. On the **Verify Installation Source** page, accept the default, **Verify Installation Source** and click **OK**.
This may take some time to process. If you get error from the verification, download the software again and create a fresh CD.
11. On the **Verification Successful** page, click **OK**.
12. On the **Set Password** page, type the required password, type it again to confirm and click **OK**.
13. On the **Select Time Zone** page, choose your geographical area and click **OK**.
14. On the second **Select Time Zone** page, select a city in your time zone and click **OK**.
15. On the **System Time** page, select **Manual time entry** and click **OK**.
16. On the **Networking** page, if you are prompted to select a management network interface, select your required network interface card (NIC) and click **OK**.

Note: If the computer has a single network interface card (as recommended), that interface is automatically used as the management NIC and no prompt is displayed.

17. Select **Static configuration**, specify the following values and click **OK**.

	XenServerOne	XenServerTwo
IP Address	192.168.1.2	192.168.1.3
Subnet mask	255.255.255.0	255.255.255.0

18. On the **Hostname and DNS Configuration** page, specify the names of the server you are installing:

(i) In the **Hostname Configuration** section, select **Manually specify** and type name of the server you are configuring as:

XenServerOne or **XenServerTwo**

(ii) In the **DNS Configuration** section, select **Manually specify**, type 192.168.1.10 as the IP address of the primary name server and click **OK**.

19. On the **Confirm Installation** page, select **Install XenServer** and click **OK**.

20. On the **Set local time** page, enter the correct date and time and click **OK**.

21. On the **Installation Complete** page, click **OK**. The system automatically restarts.

When you have completed the installation of XenServerOne, repeat the procedure for XenServerTwo taking into account differences in networking information.

Task 2: Installing and Configuring XenCenter

This section guides you through the installation and configuration of XenCenter on the XenCenter Host. Refer to Figure 2 on page 2 for information about how XenCenterConsole relates to the other server components.

- *To assign a static IP address to XenCenterHost*
- *To install XenCenter on XenCenterHost*
- *To connect XenCenter to XenServerOne*
- *To connect XenCenter to XenServerTwo*
- *To add the XenDesktop Beta hotfix to XenCenter*
- *To create a resource pool on XenServerTwo*

To assign a static IP address to XenCenterHost

On **XenCenterHost**, open **Internet Protocol (TCP/IP) Properties** and assign a static IP address, specifying the following values:

IP Address	192.168.1.5
Subnet mask	255.255.255.0
Gateway	192.168.1.1

For more information about performing this procedure, use the Windows Help system.

To install XenCenter on XenCenterHost

You can install XenCenter on a computer running Windows XP or Windows Server 2003 with the Microsoft .NET Framework 3.0 installed.

Important: Before installing XenCenter you must uninstall any previously installed versions of XenCenter.

1. On the **XenCenterHost** computer, insert the CD created from the XenServer ISO image included in this beta release. If autorun is not enabled, run **XenCenterSetup.exe**.
The **XenCenter Setup wizard** appears.
2. On the **Welcome to the XenCenter Setup Wizard** page, click **Next**.
3. On the **Select Installation Folder** page, accept the default path C:\Program Files\Citrix\XenCenter.
4. Under **Install XenCenter for yourself, or for anyone who uses this computer**, select **Everyone** and click **Next**.
5. On the **Confirm Installation** page, click **Next**.
6. On the **Installation Complete** page, click **Close**.

To connect XenCenter to XenServerOne

1. In XenCenter, click **Connect New Server**.
2. In the **Connect New Server** dialog box, type the following values:

Host name	192.168.1.2 (the IP address of XenServerOne)
User name	root
Password	<i>The password you specified when you installed XenServerOne</i>

3. Click **Connect**.

To connect XenCenter to XenServerTwo

1. in XenCenter, click **Connect New Server**.
2. In **Connect New Server** dialog box, enter the following values:

Host name	192.168.1.3 The IP address of XenServerTwo
User name	root
Password	<i>The password you specified when you installed XenServerTwo</i>

3. Click **Connect**.

To add the XenDesktop Beta hotfix to XenCenter

For this beta release, you must use XenCenter to apply a hot fix to the two instances of XenServer running in the beta environment.

1. Copy the file **hotfix-miami-beta2-netapp-sv.xsupdate** to the desktop of XenCenterHost.
2. In XenCenter, open the **Pool** menu and click **Manage updates**.
3. On the **Manage updates** page, click **Install New Update**.
4. On the **Select the Servers you want to update** page, select both **XenServerOne** and **XenServerTwo** and click **Next**.
5. On the **Load the update file onto the servers** page, specify the path to the patch and click **Next**.
XenCenter copies the patch file to the both machines that run XenServer.
6. On the **Select Mode** page, select **Automatic mode** and click **Next**.
7. On the **Perform Prechecks** page, review the results of the pre-checks performed by the wizard. If any remedial actions are required to ensure that the update can be applied, perform them now. Click **Next**.
8. On the **Apply Update** page, review the summary of selected servers and updates to be applied and then click **Next** to begin applying the update. You can monitor the progress of the updates on this page.
9. When the update has been applied to the all selected servers, click **Finish** to close the wizard.

To create a resource pool on XenServerTwo

The following steps create a new resource pool. XenServer must be in a resource pool to work with Desktop Delivery Controller.

1. In XenCenter, select **XenServerTwo** and click **New Pool**.
2. On the **Name** page, type the name **XenDesktop Pool** for the new pool (and optionally a description) and click **Next**.
3. On the **Servers** page, select **XenServerTwo** from the drop-down and click **Next**.
4. On the **Finish** page, click **Finish**.
A new pool is automatically created and the wizard closes.

Task 3: Creating XenServer Virtual Machines

In this task, you create the four VMs for your XenDesktop Getting Started infrastructure environment. You configure each of these components in later steps.

- To create the Domain Controller VM
- To create the Desktop Delivery Controller VM
- To create the Provisioning Server VM
- To create the BaseDesktop1 VM
- To create a Provisioning Server VM template
- To install XenServer Tools

Tip: Before you eject a disc from XenServerOne or XenServerTwo, you must ensure that the physical optical drive is not mounted on any VM running on XenServer. You can do this in XenCenter by verifying that the DVD drive setting for each VM is set to **<empty>**.

If the disc does not eject as intended, go to XenCenter and select the machine that contains the disc, click the **XenServer Console** tab and type **eject cd** or **eject dvd**, as necessary.

To create the Domain Controller VM

1. On XenServerOne, insert the Windows Server 2003, Service Pack 2 installation disc in the drive.
2. In XenCenter, select **XenServerOne** and click **New VM**.
3. In the **New VM** wizard, specify the following values for this VM:

Template	Windows Server 2003
Name	Name: XenDesktopDmC Description: Domain Controller
Location	Physical DVD Drive
Home server	XenServerOne
CPU & memory	Number of vCPUs 1 Initial Memory 768 MB
Virtual disks	8 GB
Virtual interfaces	Select the appropriate (or only) network interface card.

4. On the **Finish** page, select **Start VM automatically** (the default) and click **Finish**.

- In XenCenter, select the new VM, click the **Console** tab and install the OS. When prompted, configure a static IP address with the following values:

IP Address	192.168.1.10 The IP address that you reserved for the Domain Controller VM
Subnet mask	255.255.255.0 The subnet mask for your environment.
DNS	192.168.1.10 The IP address of the DNS server for your environment

To create the Desktop Delivery Controller VM

- On XenServerOne, ensure the Windows Server 2003, Service Pack 2 installation disc is in the drive.
- In XenCenter, select **XenServerOne** and click **New VM**.
- In the **New VM** wizard, specify the following values for this VM:

Template	Windows Server 2003
Name	Name: XenDesktopDDC Description: Desktop Delivery Controller
Location	Physical DVD Drive
Home server	XenServerOne
CPU & memory	Number of vCPUs 1 Initial Memory 768 MB
Virtual disks	8 GB
Virtual interfaces	Select the appropriate (or only) network interface card.

- On the **Finish** page, select the default **Start VM automatically** and click **Finish**.
- In XenCenter, select the new VM, click the **Console** tab and install the OS. When prompted, configure a static IP address with the following values:

IP Address	192.168.1.11 The IP address of the Desktop Delivery Controller VM
Subnet mask	255.255.255.0 The subnet mask for your environment.
DNS	192.168.1.10 The IP address of the DNS server for your environment

To create the Provisioning Server VM

- On XenServerOne, ensure the Windows Server 2003, Service Pack 2 installation disc is in the drive.
- In XenCenter, select **XenServerOne** and click **New VM**.



- In the New VM wizard, specify the following values for this VM.

Template	Windows Server 2003
Name	Name: XenDesktopPvS Description: Provisioning Server
Location	Physical DVD Drive
Home server	XenServerOne
CPU & memory	Number of vCPUs 1 Initial Memory 768 MB
Virtual disks	On Windows XP, at least 20 GB. On Windows Vista, at least 100 GB. Note: This disk <i>must</i> be large enough to accommodate the virtual disk (vDisk) that you create later on. If you intend to create more vDisks later on, you can increase this space now, or add space later on.
Virtual interfaces	Select the appropriate (or only) network interface card.

- On the **Finish** page, select **Start VM automatically** (the default) and click **Finish**.
- In XenCenter, select the **new VM**, click the **Console** tab and install the OS.
When prompted, configure a static IP address with the following values:

IP address	192.168.1.12 The IP address of the Provisioning Server VM
Subnet mask	255.255.255.0 The subnet mask for your environment.
DNS	192.168.1.10 The IP address of the DNS server for your environment

To create the BaseDesktop1 VM

- On XenServerTwo, insert the Windows XP installation optical disc in the drive.
- In XenCenter, select **XenServerTwo** and click **New VM**.
- In the **New VM** wizard, specify the following values for this VM:

Template	Windows XP SP2
Name	Name: BaseDesktop1 Description: Base Desktop Image - VM to be imaged to the Provisioning Server virtual disk
Location	Physical DVD Drive
Home server	XenServerTwo
CPU & memory	Number of vCPUs 1 Initial Memory 512 MB
Virtual disks	8 GB
Virtual interfaces	Ensure that the appropriate (or only) network interface card is selected.

4. On the **Finish** page, select **Start VM automatically** (the default) and click **Finish**.
5. In XenCenter, select the new VM, click the **Console** tab and install the OS. When prompted, configure a dynamic IP address.
This VM receives its IP address from the DHCP server running on the Domain Controller VM.

To create a Provisioning Server VM template

1. In XenCenter, select **XenServerTwo** and click **New VM**.
2. In the **New VM** wizard, specify the following values for this VM:

Template	Other Install Media
Name	Name: PvS VM Template Description: Use this image with the Setup Tool
Location	Physical DVD Drive
Home server	XenServerTwo
CPU & memory	Number of vCPUs 1 Initial Memory 512 MB
Virtual disks	Leave blank. Do not assign a virtual disk to this VM.
Virtual interfaces	Ensure that the appropriate (or only) network interface card is selected.

3. On the **Finish** page, deselect **Start VM automatically** (the default) and click **Finish**.
4. In XenCenter, select **PvS VM Template** in the navigation pane, click the **General** tab and click **Edit**.
5. In the **Edit General Settings** window, click the **Start Options** tab. Under **Boot Order**, select **Network** and move it to the top. Click **OK**.

To install XenServer Tools

XenServer Tools provide high-performance Windows drivers and a management agent. You must install these tools on the following VMs:

- XenDesktopDmC (Domain Controller VM)
- XenDesktopDDC (Desktop Delivery Controller VM)
- XenDesktopPvS (Provisioning Server VM)
- BaseDesktop1 (Base Desktop VM on XenServerTwo)

Note: For Windows Vista only, when you create a base image for a Vista desktop, you must install the Virtual Desktop Agent **before** you install XenServer Tools, otherwise the agent installation will fail.

Perform the following steps on each VM:

1. In XenCenter, right-click the VM name in the navigation pane and select **Install XenServer Tools**.
2. In the **Install XenServer Tools** dialog box, click **Install XenServer Tools**.
3. Read and accept the license agreement, and click **Next**.

4. On the **Choose Install Location** page, accept the default location and click **Install**.
5. Click **Finish**. The VM automatically restarts with the tools installed.

Note: To finalize the OS installation, apply any Microsoft updates or security updates **after** the VMs are created.

Task 4: Configuring Active Directory for XenDesktop

Desktop Delivery Controller uses Active Directory to store configuration information and to manage the assignment of virtual desktops to users. This section describes how to configure Active Directory specifically for XenDesktop.

- *To create and configure Active Directory on the Domain Controller VM*
- *To create an organizational unit named XenDesktop*
- *To create user accounts*
- *To add virtual machines to the XenDT.net domain*

To create and configure Active Directory on the Domain Controller VM

Configure Active Directory on the Domain Controller VM on XenServerOne, using the following guidelines.

Domain controller	In Windows Server 2003, create an Active Directory Domain named XenDT.net with a single domain controller. Note: For this version, both Native Mode and Mixed Mode are supported, however, you cannot install multiple domain controllers.
DNS server	Configure Active Directory to include a DNS server, which must be configured to have both forward and reverse look-up zones.
DHCP server	<p>DCHP scope</p> <p>Specify a DHCP scope named XenDesktop with an address range that enables DHCP to dynamically assign IP addresses to the new virtual desktops, while protecting the IP addresses that you have already assigned as static. In this case, the static addresses for the XenDesktop Beta environment (including the gateway address) are in the range 192.168.1.1 to 192.168.1.19. Assign a DHCP scope of 192.168.1.20 to 192.168.1.200.</p> <p>DHCP settings</p> <p>After Provisioning Server is installed, you need to make additional changes to the DHCP settings. For more information, see <i>To configure DHCP boot options 66 and 67 on XenDesktopDmC</i> on page 24.</p> <p>Note: Perform the intervening steps before completing your DHCP configuration on page 24.</p>

For more information about Active Directory, DNS, and DHCP, refer to the relevant Microsoft documentation.

To create an organizational unit named XenDesktop

At the root level, create an organizational unit (OU) named **XenDesktop**. This OU is used to store Desktop Delivery Controller farm configuration.

For more information about Active Directory and creating an OU, refer to the relevant Microsoft documentation (on MSDN, for example).

To create user accounts

Create five test user accounts named User_1 through User_5, with or without passwords, as required. These accounts will enable different users to log onto the virtual desktops.

To add virtual machines to the XenDT.net domain

Add the following VMs as members of the domain XenDT.net.

- XenDesktopDDC
- XenDesktopPvS
- BaseDesktopImage1

Optionally, you can also add XenCenterHost to the domain.

Task 5: Installing Desktop Delivery Controller

The Desktop Delivery Controller installation automatically installs all the prerequisite Desktop Delivery Controller components. For installing Terminal Server and Internet Information Services (IIS), the installation program prompts you to insert the Windows Server 2003, Service Pack2 installation disc at the appropriate time.

For the XenDesktop Beta, you **must** install all Desktop Delivery Controller components on one server.

- *To install Desktop Delivery Controller*
- *To run the XenDesktop Active Directory configuration wizard*
- *To configure the Access Management Console*
- *To install the XenDesktop Beta license*
-

Tip: You cannot eject a disc from the XenServer host, if the physical optical drive is mounted on any VM running on XenServer. You can do this in XenCenter by verifying that the DVD drive setting for each VM is set to **<empty>**.

If the optical disc still does not eject, go to XenCenter and select the XenServer that contains the disc. Click the **Console** tab and type **eject cd** or **eject dvd**, as necessary.

To install Desktop Delivery Controller

1. Log on to the **XenDesktopDDC** VM as a domain administrator.
2. On XenServerOne, insert the optical disc created from the ISO image of Desktop Delivery Controller. If autorun is not enabled and the installation window does not appear, run **autorun.exe** from the disc.
3. On the installation window, select **Install Server Components**.
4. Read and accept the license agreement and click **Next**.
5. On the **Select Components** page, leave all options selected and click **Next**.
6. On the **Create or Join a Server Farm** page, select **Create New Farm**, type **XenDtFarm** and click **Next**.
 A farm name can have up to 32 characters, including spaces. The following characters are not allowed:
 \ / ; : . * ? = < > | [] () ' " #
 On the **Optional Server Configuration** page, click **Next**.
7. On the **Start Installation** page, click **Next**.
8. Follow the on-screen prompts.

Note: When the installation program prompts you to restart the server, you must log on with same user ID and password that you used to start the installation.

9. On the **Setup Complete** page, leave both check boxes selected and click **Finish**.
 Both the Active Directory configuration wizard and the License Management Console start up. Follow the instructions in the next two sections to configure these components.
10. When prompted to restart, click **Yes**.

To run the XenDesktop Active Directory configuration wizard

Use this wizard to configure the default population of the Active Directory organizational unit—specifically for running the Desktop Delivery Controller. This wizard starts automatically after you complete the earlier procedure, *To install Desktop Delivery Controller*.

1. On the **Active Directory Configuration Wizard** page, click **Next**.
2. On the **Configure Farm OU in Active Directory** page, click **Browse** and navigate to the XenDesktop OU. Click **OK** to close the navigation window. Click **Next**.
3. On the next page, click **Finish** and then, on the **Summary** page, click **Finish** again.
4. When prompted to start the **Access Management Console**, click **Yes**.
 Leave the console running for the next procedure.

To configure the Access Management Console

When the Access Management Console starts for the first time, the **Configure and run discovery wizard** opens.

1. On the **Welcome** page, click **Next**.
2. On the **Select Product or Components** page, ensure that all the check boxes are selected and click **Next**.
3. On the **Select Controllers** page, click **Add Local Computer** and click **Next**.
4. On the **Preview Discovery** page, click **Next**.

5. On the **Discovery Progress** page, wait until the discovery is complete and click **Finish**.
In the Access Management Console, the XenDesktopDDC VM is added to the navigation pane under **Citrix Resources > Desktop Delivery Controllers > XenDtfarm > Controllers > XenDesktopDDC**.
6. Close the Access Management Console window.

Tip: To reopen the Access Management Console at any time from the Windows Start menu, click **Start > Programs > Citrix > Management Consoles > Access Management Console**

To install the XenDesktop Beta license

To be able to use either Desktop Delivery Controller or Provisioning Server, you must install and activate the XenDesktop Beta license. The License Management Console should still be open from the earlier procedure *To run the XenDesktop Active Directory configuration wizard*.

1. In the License Management Console, go to the **Configuration** tab and click **Step 2 Copy license file to this license server**.
2. On the **Upload license File** page, click **Browse** and navigate to the location of your XenDesktop Beta license file.
The license file, CDS-TP.lic, is located in the Misc folder in the zip file you download for the XenDesktop Beta.
3. Click **Open** to select the required license file.
4. Click **Upload** to add the license file to the **License Management Console**.
5. Close the **License Management Console** window.

Tip: To reopen the License Management Console at any time from the Windows Start menu, click **Start > Programs > Citrix > Management Consoles > License Management Console**

Task 6: Installing and Configuring Provisioning Server

In this task, you install and configure the Provisioning Server and its related components including the Provisioning Server Software Development Kit (SDK) and the XenDesktop Setup Tool Beta.

- To install Provisioning Server
- To configure Provisioning Server
- To install Microsoft .NET Framework 3.0
- To install the Provisioning Server SDK
- To install the XenDesktop Setup Tool
- To create the Provisioning Server virtual disk (vDisk)
- To configure DHCP boot options 66 and 67 on XenDesktopDmC

To install Provisioning Server

This procedure installs the Provisioning Server software on the XenDesktopPvS virtual machine located on XenServerOne.

1. On **XenServerOne**, insert the CD created from the ISO image of Provisioning Server.
If the startup window does not appear, run **ProvSrv45_ServerInstall.exe**.
2. Log on to the PVS server as a domain administrator and, in XenCenter, map the physical CD ROM drive of XenServerOne to the XenDesktopPvS.
3. On the startup window, click **Install Server for x86 Platform**.
4. On the **Welcome to the Installation Wizard for Provisioning Server** page, click **Next**.
5. Read and accept the license agreement and click **Next**.
6. On the **Customer Information** page, type your customer information.
7. Accept the default option **Anyone who uses this computer (all users)** and click **Next**.
8. On the **Destination Folder** page, accept the default location and click **Next**.
9. On the **Setup Type** page, select **Complete** and click **Next**.
10. On the **Ready to Install the Program** page, click **Install**.
11. On the **Installation Wizard Completed** page, click **Finish**.
12. The Provisioning Server Configuration wizard starts automatically following installation. The next section takes you through this wizard.

To configure Provisioning Server

1. On the **Provisioning Server Configuration Wizard** page, click **Next**.
2. On the **DHCP services** page, select **The service is running on another device** and click **Next**.
3. On the **PXE services** page, select **The service is running on this computer** and click **Next**.
4. On the **Database location** page, accept the default location for the database and click **Next**.
5. On the **License server** page, specify the license server name, **XenDesktopDDC**.

6. Accept the default value for the port (27000), select **Citrix Provisioning Server for Desktops** and click **Next**.
7. On the **Streaming services** page, accept the defaults and click **Next**.
6. On the **TFTP option and bootstrap location** page, select **Use the Provisioning Server TFTP Service**, accept the default location and click **Next**.
7. On the **Stream Servers Boot List** page, ensure the IP address of the Provisioning Server VM is displayed and click **Next**.

Note: DHCP automatically provides the subnet mask and gateway information. On this page, the subnet mask is displayed as 0.0.0.0, which you can ignore.

8. On the **Finish** page, confirm your configuration selections, ensure that **Automatically Start Services** is selected and click **Finish**.
9. Click **Done** when the configuration process completes.

To install Microsoft .NET Framework 3.0

Microsoft .NET Framework 3.0 is a prerequisite for installing the XenDesktop Setup Tool on the VM running Provisioning Server.

The .NET 3.0 binaries are located in the Desktop Delivery Controller installation files under **Support\DotNet30**.

1. On XenServerOne, insert the CD created from the ISO image of the **Desktop Delivery Controller**.
2. On the Provisioning Server VM (XenDesktopPvS), navigate to the folder **\Support\DotNet30**, and run **dotnetfx3.exe** from this location.
3. Follow the on-screen instructions to complete the installation.

To install the Provisioning Server SDK

1. On the XenDesktopPvS VM, navigate to the Citrix XenDesktop Setup Tool folder, and run **PVS-SDK.exe**.
2. On the **Welcome** page, click **Next**.
3. On the next page, accept the default location and click **Next**.
4. On the next page, accept the default options for **Start Provisioning Server SDK after installation** and **Auto start Provisioning Server SDK on system restart** and click **Next**.
5. Click **Next** again.
6. On the **Installation Successful** page, click **Finish**. If this window is obscured, you can manually bring it into focus.
7. After the installation has completed, a command window opens with a message stating that **Simple Axis HTTP Server** has started. Do not close this window.

To install the XenDesktop Setup Tool

1. On the XenDesktopPvS VM, navigate to the **Citrix XenDesktop Setup Tool** folder, and run **XenDesktopSetupToolBeta.msi**.
2. On the **Welcome** page, click **Next**.
3. On the **End-User Agreement** page, accept the terms and click **Next**.
4. On the **Destination Folder** page, browse to the location of the Setup Tool files and click **Next**.
5. On the **Ready to Install** page, click **Install**.
6. On the **Completed** page, click **Finish**.

To create the Provisioning Server virtual disk (vDisk)

1. On the XenDesktopPvS VM, click **Start > Programs > Citrix Provisioning Server > Provisioning Server Console**. The console opens.
2. In the **Provisioning Servers** section, right-click the provisioning server, and select **New Virtual Disk**.
3. On the **Select New Disk Type** page, accept the default option **create a new virtual disk file capable of booting a target device** and click **OK**.
4. On the **Add Virtual Disk** page, specify the following values and click **OK**:

Disk name	vDisk1
Disk size	8192 MB (Windows XP) 16384 MB (Windows Vista)
Description	Master Virtual Desktop Disk

The creation of the disk takes several minutes to complete.

5. Right-click **vDisk1**, select **Properties**, and open the **Options** tab. Select **Enable Active Directory Machine Account Password Management** and click **OK**.
6. Expand the server tree, right-click **XenDesktopPvS**, select **Properties**, and open the **Options** tab. Select **Enable automatic password support**, accept the default value for the number of days and click **OK**.
7. Right-click the disk you created, and select **Map disk as local drive**.
 - (i) On the Provisioning Server VM (XenDesktopPvS), open **My Computer**. Under **Devices with Removable Storage**, right-click the removable disk that is displayed and click **Format**.
 - (ii) Format the vDisk as an NTFS disk.

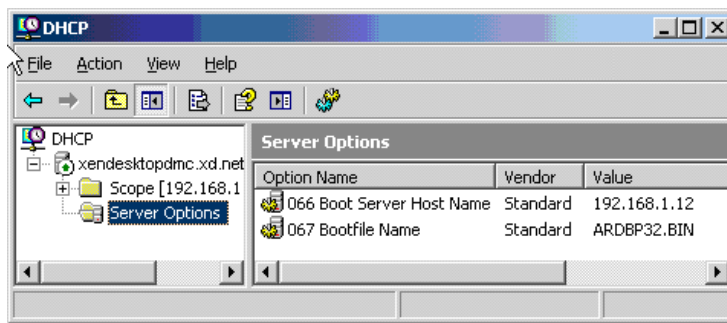


Caution: Format only the removable disk. Do not format **any** drive listed in the **Hard Disk Drives** section.

8. In the Provisioning Server Console, right click the vDisk that you have created, and select **Unmap Disk**.

To configure DHCP boot options 66 and 67 on XenDesktopDmC

1. On the Domain Controller VM, click **Start > All Programs > Administrative Tools > DHCP** to open the DHCP Management Console on the domain controller.
2. In the navigation pane, select **Server Options**.
3. From the **Action** menu, select **Configure Options**.
4. In the **Server Options** dialog box, click the **General** tab.
5. Enable the option **066 Boot Server Host Name**, and type 192.168.1.12 (the IP address of XenDesktopPvS). Click **Apply**.
6. Enable the option **067 Bootfile Name**, specify the corresponding value as ARDBP32.bin and click **OK**.
Your DHCP configuration now looks something like this:



Task 7: Preparing the Virtual Desktop Image

This task is a single procedure.

To install the Virtual Desktop Agent on the BaseDesktop1 VM

The Virtual Desktop Agent is installed on all virtual desktops to which users connect. This agent enables users to make an ICA connection to their virtual desktops.

Note: You cannot eject a disc from the XenServer host, if the physical optical drive is mounted on any VM running on XenServer. You can do this in XenCenter by verifying that the DVD drive setting for each VM is set to **<empty>**.

If the optical disc still does not eject, go to XenCenter, and select the XenServer that contains the disc. Click the **Console** tab, and type **eject cd** or **eject dvd**, as necessary.

1. In XenCenter, select **BaseDesktop1** in the navigation pane. The details appear in the pane on the right.
2. Right-click **BaseDesktop1** and click **Start**. The VM must be running to complete this procedure.
3. Open the **General** tab, click **Edit**.
4. On the **Startup Options** tab, move **Network** to the top of the **Boot Order** list and click **OK**.
5. Insert the CD created from the Desktop Delivery Controller ISO image.
If autorun is not enabled and the startup window does not appear, run **autorun.exe** from the CD.
6. In the startup window, click **Install Virtual Desktop Components**.

7. On the **Welcome to the Citrix Virtual Desktop Agent Setup Wizard** page, click **Next**.

Note: The installation program prompts you to install .NET 3.0 Framework if it is not already installed.

8. Read and accept the license agreement and click **Next**.
9. On the **Port Number** page, accept the default port number, **8080** and click **Next**.

Note: The standard session reliability and ICA ports are used by the client device to connect to the Virtual desktop; you cannot configure these ports as part of the virtual desktop installation process.

10. On the **Windows Firewall Configuration** page, select **Automatically configure Windows firewall** and click **Next**.
11. On the **Farm selection** page, select the check box **Select farm now**, and chose **XenDtfarm** from the list of farms.
12. On the **Ready to Install** page, click **Install**.
13. If the **Driver Signing Warning** dialog box appears, click **Continue Anyway**.
14. When the installation is complete, click **Finish**, and restart the virtual desktop for the configuration changes to take effect.

Task 8: Preparing and Provisioning Virtual Desktops

This task guides you through the steps required for creating a vDisk that will be used for provisioning the virtual desktops.

- *To add BaseDesktop1 to the Provisioning Server database*
- *To install a target device for the x86 platform on the BaseDesktop1 VM*
- *Customizing the Desktop for Your Users*
- *Disabling the Windows Firewall*
- *To image BaseDesktop1 to the Provisioning Server virtual disk*
- *To set Virtual Disk Access Mode to Standard Image*

To add BaseDesktop1 to the Provisioning Server database

1. After restarting the virtual desktop in the previous procedure, when prompted in the BIOS for a device name, type **BaseDesktop1**, and press **ENTER**.
2. On the **Device Description** page, type **Master virtual desktop image**, and press **ENTER**.
3. On the **Select virtual disk assignment** page, type **1** and press **ENTER**.
4. Type **H** to select the hard disk as the preferred boot device, and press **ENTER**.
5. Press any key to restart the BaseDesktop1 VM.
After the restart, refresh the Provisioning Server Console; the vDisk is shown as mapped to BaseDesktop1.

Note: You can confirm that the vDisk has been successfully created at the end of the next procedure.

To install a target device for the x86 platform on the BaseDesktop1 VM

Before performing this procedure, open **My Computer**, and make a note of the drive letters assigned to the hard drives on the XenDesktopPvS VM. You need this information later on to ensure that you can correctly identify the vDisk.

1. On XenServerTwo, log on to the BaseDesktop1 VM, and insert the CD containing the ISO image of Provisioning Server.
2. On the Provisioning Server start-up window, click **Install Target Device for x86 Platform**.
If the start-up window does not appear, run **ProvSrv45_DeviceInstall32.exe** from the disc.
3. On the **Welcome to the Installation Wizard for Provisioning Server Target Device** page, click **Next**.
4. Read and accept the license agreement and click **Next**.
5. On the **Customer Information** page, enter your details, accept the default option **Anyone who uses this computer (all users)** and click **Next**.
6. On the **Destination Folder** page, accept the default location and click **Next**.
7. On the **Ready to install the program** page, click **Install**.
8. On the **Installation Wizard completed** page, click **Finish**.

The vDisk is now mapped to BaseDesktop1, and a vDisk icon appears in the Windows notification area.



9. Double-click the **vDisk** icon, and confirm that the vDisk status is “**Active**”.
10. In **My Computer**, make a note of the new drive letter (typically, the letter is **E.**)

Customizing the Desktop for Your Users

At this stage of the installation process you can perform additional customizations to the virtual desktop image depending on your users' requirements. For example, you could install Program Neighborhood Agent (although for the purposes of this beta release, this step is not required.)

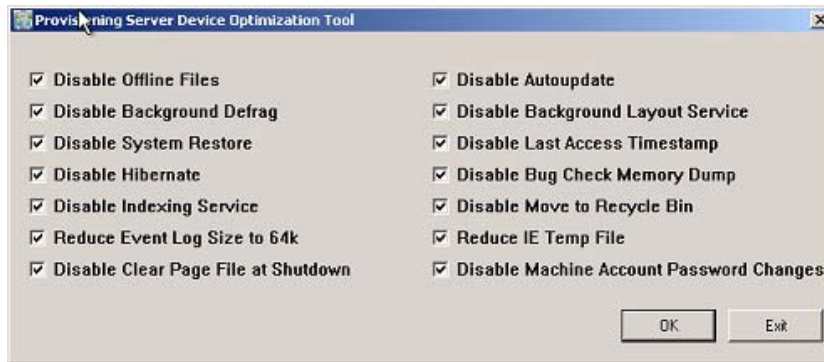
Disabling the Windows Firewall

Citrix recommends that you disable the Windows Firewall for the purposes of evaluating XenDesktop Beta.

Note: If you do not wish to (or cannot) disable the Windows firewall, the virtual desktop client attempts to open the correct ports, if it can.

To image BaseDesktop1 to the Provisioning Server virtual disk

1. On the Provisioning Server VM, click **Start > All Programs > Citrix Provisioning Server > Provisioning Server Image Builder**. The Provisioning Server Image Builder wizard opens.
2. On the **Device Image Builder** page, click **Optimize**. The **Provisioning Server Device Optimization Tool** opens.



3. Leave all check boxes selected and click **OK**.
4. On the **Device Image Builder** page, use the **Browse** button to set the destination drive to the drive letter of the new hard disk drive and click **OK**.
The destination drive maps to the vDisk you created in your Provisioning Server VM.

Note: If you use My Computer to check the drive letters on BaseDesktop1, the vDisk appears as a disk under Hard Disk Drives in My Computer, and as a device under **Devices with Removable Storage**.

5. Ensure that the check box **Delete all files and folders in destination path before building image** is selected and click **Build**.
6. On the **Confirm Build** details page, click **Yes**.
7. When the client image build is complete, click **OK**.
8. Click **Close**. The Image Builder Utility closes.
9. Shutdown the BaseDesktop1 VM.

Note: You can restart the BaseDesktop1 VM at any time, for example, to add new patches or software, and rebuild your vDisk as per the previous instructions.

To set Virtual Disk Access Mode to Standard Image

1. In the Provisioning Server Console, under **Target Devices > BaseDesktop1 > XENDESKTOPPVS vDisk1**, right-click the vDisk under the client node, and select **Properties**.
2. On the **Disk Mode** tab, change the **Access Mode** to **Standard Image (multi-client, write cache enabled)** and click **OK**.

Tip: If the vDisk is locked, right-click the entry for the vDisk, select **Disk Locks**, and remove all locks.

Task 9: Creating Multiple Virtual Desktops

Use the XenDesktop Beta Setup Tool to create the desktop VMs from a single VM image.

- To configure XenDesktop Setup Tool
- To create the virtual desktops
- To modify the idle desktop count

To configure XenDesktop Setup Tool

Before you can create the virtual desktops, you must specify the IP addresses of the main components, and a user name and password for logging on to XenServerTwo.

1. On the Provisioning Server VM (XenDesktopPvS), click **Start > Programs > Citrix > Management Consoles > XenDesktop Setup Tool Beta**. The XenDesktop Setup Tool window opens.
2. The first time you load the Setup Tool, replace the bracketed sections shown in the tool with the following values:

<i>[Provisioning Server Desktops]</i>	192.168.1.12 IP address of XenDesktopPvS
<i>[Desktop Delivery Controller]</i>	192.168.1.11 IP address of XenDesktopDDC
<i>[XenServer]</i>	192.168.1.3 IP address of XenServerTwo. Note: By default, you cannot use the name XenServerTwo unless you manually add it to the DNS.

3. Click **Credentials** to open the login information dialog box.
4. Specify the following values for the user name and password for connecting to XenServerTwo:

User name	root
Password	[Your password]
Confirm Password	Retype your password

5. Click **Save**. The logon information dialog box closes, and you return to the main window.
6. *Optional.* To enable logging in the XenDesktop Setup Tool:
In the Setup Tool, right-click **XenDesktop Setup Tool Beta** in the navigation pane and click **Enable logging**. In the details pane, the **Event Log File Name** field shows the default location of the log file.

To create the virtual desktops

1. If necessary, open the XenDesktop Setup Tool Beta window (click **Start > Programs > Citrix > Management Consoles > XenDesktop Setup Tool Beta**.)
2. Click **Start** to open the Welcome page of the wizard. Click **Next**.

3. On the **Select base VM** page, select **PvS VM Template** and click **Next**.
4. On the **Details** page, specify the following values and click **Next**:

Base Hostname	XenDesktop
No. of Clones	5
Start Index	1
5. On the **Select Provisioning Server vDisk** page, select **vDisk1** and click **Next**.
6. On the **Summary** page, review your selections and click **Start**.
7. On the **Progress** page, wait until processing has finished and click **Finish**.
The following changes have been made to you system:
 - VMs XenDesktop_1 through XenDesktop_5 are visible in both the XenServer console and the Provisioning Server console.
 - The VMs have been added to the domain and are displayed under the Computer container on the domain controller.
 - A desktop group has been created and is displayed in the Desktop Delivery Controller Console. (A desktop group is a collection of available virtual desktops.)

To modify the idle desktop count

Desktop Delivery Controller limits access to virtual desktops, depending on the current time period you are in. This means that in business hours, some virtual desktops are always reserved for peak hours and out of hours. This feature is for production environments, where it is important to have virtual desktops available for new users who wish to log on to a virtual desktop.

By default, the idle count on the Desktop Delivery Controller is one. This means that only one of the five virtual desktops is running after you create them. If you attempt to start one of the idle desktops, the attempt will fail, unless you change the idle desktop count settings.

1. On the **XenDesktopDDC** VM, click **Start > Access Management Console**.
2. Click **Citrix Resources > Desktop Delivery Controller > XenDtFarm > Desktop Groups**, and right-click the name of the desktop group you just created.
3. Click **Properties**. The Desktop Group Properties page appears.
4. Click **Idle Pool Settings** in the left pane.
5. In the **Idle Desktop Count** section, modify the settings as follows:
 - **Business hours** 3
 - **Peak time** 1
 - **Out of hours** 1
6. Click **OK** to save and apply your settings. The Desktop Group Properties window closes.
7. In XenCenter, start each cloned desktop in turn (XenDesktop_1 through XenDesktop_5), but do not log on.

-
- Notes:**
1. If you are logged on to one of the desktop VMs, that desktop is not available for connection to an endpoint device.
 2. The number of VMs you can start depends on the time of day. Because some of the desktops must be idle, you will not be able to start them all.
-

Task 10: Preparing the Endpoint Device

In this task, you set up the endpoint device so that it can access a full-screen-only-mode desktop. Repeat these procedures for each active endpoint device in your environment.

- To install a XenDesktop client on an endpoint device
- To install the Full-Screen-Only-Mode agent

To install a XenDesktop client on an endpoint device

This procedure applies to a Windows XP endpoint device only.

1. On the endpoint device, insert the CD created from the Desktop Delivery Controller ISO image included in this release. Navigate to the **Clients\ica32** folder and run **ica32pkg.msi**.
2. On the **Select Language** dialog box, select your language from the drop-down list and click **OK**.
3. On the **Welcome** page, click **Next**.
4. Read and accept the license agreement and click **Next**.
5. On the **Select Client** page, accept the defaults and click **Next**.
6. On the **Server Address** page, type the value of the IP address (192.168.1.11) of the Desktop Delivery Controller VM on XenServerOne, and then click **Next**.
7. On the **Select Program Folder** page, accept the defaults and click **Next**.
8. On the **Client Name** page, accept the defaults and click **Next**.
9. On the **Use Local Name and Password** page, select **Yes** and click **Next**.
10. On the **Program Neighborhood Options** page, accept the defaults and click **Next**.
11. On the **Ready to Install** page, click **Next**.
12. Click **Finish** to close the wizard.
13. Perform the next procedure (*To install the Full-Screen-Only-Mode agent*) before you restart.

To install the Full-Screen-Only-Mode agent

1. On the same CD, navigate to the **Clients\ica32** folder again and run **liveindesktop.msi**.
2. Read and accept the license agreement and click **Install**.
3. Wait until the **Configuration Completed** dialog box appears and click **Close**.
4. When prompted to restart, click **Yes**.

Task 11: Connecting to Virtual Desktops as a User

This task describes how a user working on an endpoint device connects to a virtual desktop in Full-Screen-Only Mode. It also suggests how to connect from a thin client device.

- *To connect from a Windows XP client*
- *To connect from a thin client*

To connect from a Windows XP client

The XenDesktop Beta supports the delivery of a full-screen-only-mode virtual desktop from a VM running Windows XP (or Windows Vista). The Virtual Desktop Agent must be installed on the VM, and the users who log on to the virtual machine have an authorized user name and password.

The user experience is as follows:

1. Turn on the Windows XP computer.
 A Windows start-up screen is displayed, followed by the standard **Log On to Windows** dialog box.
2. Enter a valid user name, password, and domain name, in exactly the same way as you would log on to a local machine, and then click **OK**.

Tip: To experience the virtual desktop in full-screen-only mode, you must log on as a domain user, not as an administrator. If you log on as a local or domain administrator, you log on to the local machine.

A Citrix startup window appears with informational messages displayed while the connection to XenServerTwo (the server on which the virtual desktop VMs are located) is made and the virtual machine is started. Finally, the full-screen (virtual) desktop appears. The desktop is not inside a window and, therefore, cannot be minimized.

When users work in this environment, they are unaware that the desktop is being hosted remotely.

3. Log off at the end of the session.
 The standard Log on to Windows dialog box appears again, until the next log on or restart.

To connect from a thin client

Connection from a thin client depends on the type of thin client and whether it supports a Web browser or, alternatively, Program Neighborhood Agent.

Note: These options are not explicitly supported in this beta release because of differences in the manufacturer's configuration tools. However, you can explore the possibilities of connecting thin clients to a full-screen virtual desktop by following the guidelines below.

Check the manufacturer's documentation for details of how to set up these options.

Option 1: Thin client supports a Web browser

Specify the following start-up URL for the thin-client Web browser:

<http://XenDesktopDDC>

Option 2: Thin client supports Program Neighborhood Agent

Specify the following start-up URL for the PNAgent:

<http://XenDesktop/Citrix/PNAgent/config.xml>

where XenDesktopDDC is the name of the server (VM) on which Desktop Delivery Controller runs.

Troubleshooting

In this section, the troubleshooting topics are arranged in the following categories:

- *Desktop Delivery Controller*
- *Provisioning Server*
- *Virtual desktop agent*
- *XenDesktop Setup Tool*
- *XenServer*

Desktop Delivery Controller

Late-breaking issues with Desktop Delivery Controller

For information on late-breaking issues related to installing and using Desktop Delivery Controller, refer to *Desktop Delivery Controller Version 2.0 Beta Readme*, which is packaged with the Desktop Delivery Controller installation media.

Provisioning Server

vDisk status not Active

If you create a vDisk, you can check the status by double-clicking the vDisk icon in the Windows notification area. If the status is not “Active”, it is likely that the client cannot resolve the name of the Provisioning Server VM.

To resolve this issue:

1. Check the network settings of your client and or your Provisioning Server VM.
2. Check the DNS to ensure that both the client and server have been correctly registered.

Virtual desktop agent

Cannot connect to virtual desktops

There are several reasons that can cause issues when connecting to virtual desktops. To resolve these issues, try the following steps:

1. Check that the Desktop Delivery Controller connection state for the virtual desktop is shown as “Idle” in the Desktop Group within the Access Management Console.

2. If the virtual desktop status shows that the virtual desktop cannot contact the server (its status is “Not Registered”), restart the virtual desktop, wait for one minute and try again.
3. Disable the Windows firewall on the virtual desktop and try again.
4. The Virtual Desktop Agent should be installed on the virtual desktop when the virtual desktop is a member of the Active Directory domain. If the Virtual Desktop Agent was installed prior to joining the domain, remove the agent, add the machine to the domain and reinstall the agent.

Virtual desktop agent services do not start

In some environments, the Virtual Desktop Agent services may fail to start due to a timeout when Windows attempts to verify the Authenticode signatures. The virtual desktop cannot register with the controller, which means that users are not able to connect.

To resolve this issue:

- On Windows XP clients, remove and reinstall the Virtual Desktop Agent.
- On Windows Vista clients, make sure you installed .Net 3.5 before installing the Virtual Desktop Agent.

Note: During installation, on Windows XP, the Virtual Desktop Agent checks for .Net 3.0 and installs it, if necessary.

On Windows the Virtual Desktop Agent checks for .Net 3.0 (which is present) but does not install 3.5 (which is required).

Virtual desktop agent does not register with the DDC

In some environments the Virtual Desktop Agent services may fail to register correctly with the Desktop Delivery Controller. The virtual desktop will be listed as “Not Registered” in the Desktop Group within the Access Management Console, which means that users are not able to connect.

To resolve this issue:

1. Make sure that both the following are true:
 - The client can resolve the IP address of the Desktop Delivery Controller server.
 - The Desktop Delivery Controller server can resolve the IP address of the client.
2. Make sure that the records on the DNS server are correct in both the forward and reverse look-up zones.
3. Check your firewall settings if a firewall is active.
4. Check the clock settings on your virtual machines. If there is more than a one hour difference between any client or server and the domain controller, authentication will fail.

Agent installation on Microsoft Vista fails

If you install the Virtual Desktop Agent on a Windows Vista desktop hosted by XenServer, the Virtual Desktop Agent must be installed **before** the XenServer PV Tools. The Virtual Desktop Agent installation will fail if the PV Tools are already installed.

XenDesktop Setup Tool

Enable logging on the XenDesktop Setup Tool

To help troubleshoot problems in the XenDesktop Setup Tool, you can enable logging by opening the tool and clicking **Enable logging**. The location of the log files is shown in the XenDesktop Setup Tool window.

XenDesktop Setup Tool MMC3 Error

The XenDesktop Setup Tool installation program generates an error if it detects that MMC3 is not already installed on the server on which you are trying to install the tool, and the installation program ends. This problem occurs Windows Server 2003 Service Pack 2, which is a XenDesktop prerequisite, is not installed.

To resolve this issue, install Windows Server 2003, Service Pack2 on the server on which you are installing the tool.

XenServer

CPU hardware virtualization not supported

If the CPU on the server running XenServer does not support hardware virtualization or if such support is disabled in the BIOS, a message appears to warn you that you cannot run virtual machines on Windows.

1. Check that the computer on which you are installing XenServer must have a CPU that supports hardware virtualization (see *Hardware Requirements*).
2. In addition, if you have already confirmed that your CPU does support hardware virtualization and you have enabled the BIOS accordingly, you may still get an unexpected warning about a lack of hardware virtualization. In this case, perform a hardware reset of the host and restart the installation.
3. If you still experience issues, check the hardware manufacturer's support site for BIOS upgrades.

What's New in the XenDesktop Beta

XenDesktop Beta is the successor to the XenDesktop Tech Preview Kit. The main changes are listed below.

Vista Support

This release supports both Windows XP and Windows Vista virtual desktops. This means that you can use an XP endpoint to run a full-screen-only-mode Vista virtual desktop. Vista endpoints are also supported.

Note: Differences in the XP and Vista installation procedures are clearly shown where they occur. See to the section *Installation and Configuration Procedures* for details.

User connection experience

The main use case in this release is for the full-screen-only-mode display of virtual desktops on an endpoint device.

In this mode, when a user connects to a virtual desktop, the desktop is displayed as a full screen on the user's machine. The user experience is nearly identical to that produced by using standard Windows XP or Windows Vista locally.

Enhanced XenDesktop Setup Tool Beta

The new XenServer Setup Tool automates many time-consuming setup tasks including:

- Running discovery
- Creating Web sites for Web Interface and the Program Neighborhood Agent service
- Publishing Desktops

What's happened to...

- Desktop Server
Desktop Server has been renamed as Desktop Delivery Controller.
- Web Interface
Web Interface is still part of XenDesktop, but it is no longer a separately installable product. Web Interface and its related components do not need to be configurable as part of the standard installation procedures.

Supported Active Directory Modes

Active Directory in Windows Server 2003 can now run in both native mode and mixed mode. Previously only native mode was supported. Multiple domain controllers are not supported for this Beta.

ICA features

The following ICA features are available on this beta release through the Citrix ICA Service:

- Session reliability
- SpeedScreen Image Acceleration
- SpeedScreen Browser Acceleration
- Endpoint device drive, LPT, and COM port mapping
- Printing using the Universal Printer Driver
- Secure ICA
- Audio is available when connecting to Windows XP desktops, but not those running on Windows Vista
- Multimonitor support
- Microsoft ClearType support

There is no support for the following ICA features:

- Smart card authentication
- Kerberos single sign-on
- TWAIN mapping
- USB PDA synchronization
- SmartAuditor
- SpeedScreen Multimedia Remoting
- SpeedScreen Flash Acceleration

For more information about ICA features, refer to the *Clients for Windows Administrator's Guide*.

Getting Additional Information

This section lists documents that are related to this XenDesktop Beta and describes how you can contact the XenDesktop visualization community.

Related Documentation

This section lists documents relating XenDesktop and provides additional information for items such as how to obtain support for this XenDesktop beta release.

XenServer

- *XenServer Administrator's Guide* is for system administrators, who need to configure and administer XenServer deployments.
- *XenServer Installation Guide* provides a high level overview of XenServer, along with step-by-step instructions on installing XenServer hosts and the XenCenter management console.
- *XenServer Virtual Machine Installation Guide* describes how to install Linux and Windows VMs on top of a XenServer deployment. As well as installing new VMs from installation discs (or with the VM templates provided with the XenServer release), this guide also explains how to create VMs from existing physical machines, using a process called P2V.
- *XenServer Release Notes* provides a list of known issues that affect XenServer release.

Provisioning Server

- *Citrix Provisioning Server Installation and Administration Guide* provides installation and administration information for Provisioning Server.
- *Citrix® Provisioning Server 4.5 Management Application Programming Interface Guide* describes the use of the Provisioning Server's management application programming interface.
- *Citrix® Provisioning Server for Data Centers 4.5 Release Notes* identifies new product features and enhancements, as well as any known or fixed issues. These release notes may also contain any last minute information that was not included in the product documentation.

Support Community

To get additional support for the XenDesktop Beta, go to the [XenDesktop – Desktop Virtualization Community](http://forums.citrix.com/ctxs?category.id=DesktopVirtualization) ([http://forums.citrix.com/ctxs?category.id=DesktopVirtualization.](http://forums.citrix.com/ctxs?category.id=DesktopVirtualization))

This community is a peer-to-peer exchange resource for Citrix customers and partners to share information about desktop virtualization. The site includes blogs, message boards and forums, webinars, live chat, and RSS feed. The site is also designated as the support forum for the XenDesktop beta release.